

REMARKS

Claims in the case are 1-5, 9-10, 12-15 and 19-22, upon entry of this amendment. Claims 1-5, 9, 10, 12-15 and 19-21 have been amended, and Claim 8 has been cancelled herein. The claims have been amended as to form, e.g., by: introducing indefinite and definite articles where appropriate; replacing "containing" with --comprising--; replacing "according to" with --of--; removing "and/or" language; and introducing indentation and altering punctuation where appropriate, and for purposes of improved clarity. Additional amendments to the claims will be discussed further herein. Section headings have been introduced into the specification by amendment herein.

The subject matter of cancelled Claim 8 (as to the grafting yield being greater than 60 wt.%) has been introduced into B of Claim 1 by amendment herein. Claim 15 has been amended such that the process steps begin with a gerund.

Claims 1-5, 8-10, 12-15 and 19-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over EP 0 728 811 (**Maruyama et al**) taken with United States Patent No. 4,937,285 (**Wittmann '285**) or United States Patent No. 5,552,465 (**Wittmann '465**) and United States Patent No.5,126,404 (**Thomas et al**). This rejection is respectfully traversed with regard to the amendments herein and the following remarks.

The thermoplastic molding composition of Applicants' claims comprises: (A) an aromatic polycarbonate and/or polyester carbonate; (B) a graft polymer prepared by means of a graft polymerization in the presence of a redox initiator system comprising (i) an organic hydroperoxide and (ii) ascorbic acid (the graft polymerization having a grafting yield of > 60 wt.%); (C) optionally a thermoplastic vinyl (co)polymer and/or polyalkylene terephthalate; (D) a phosphazene selected from those represented by formulas Ia and/or Ib (see Claim 1); and (E) optionally a fluorinated polyolefin. Thermoplastic molding compositions according Applicants' present claims provide a combination of excellent flame resistance coupled with improved mechanical properties, as compared to compositions comprising graft polymers prepared using a different initiator system.

Maruyama et al disclose thermoplastic resin compositions comprising an aromatic polycarbonate, a graft copolymer and a phosphazene (abstract). Maruyama et al do not disclose, teach or suggest preparing the graft copolymer component of their composition by means of a redox initiator system comprising an organic hydroperoxide and ascorbic acid. Further, Maruyama et al do not disclose, teach or suggest the grafting yield of the graft copolymer of their compositions. The graft copolymer of Maruyama et al's examples is prepared using cumene hydroperoxide in the absence of ascorbic acid (page 5, line 56 - page 6, line 7).

Wittmann '285 disclose compositions comprising aromatic polycarbonates and graft polymers (abstract). The graft polymers of Wittmann '285 are prepared using an initiator system which includes an organic hydroperoxide and ascorbic acid (column 2, lines 11-22). The compositions of Wittmann '285 are further disclosed as optionally including additives, such as flame retardants (column 11, lines 41-47). However, the flame retardants of Wittmann '285 are not further described. The compositions of Wittmann '285 are disclosed and stressed as possessing improved petroleum resistance (column 4, lines 20-29).

Witmann '465 disclose polycarbonate molding compositions comprising aromatic polycarbonates, graft polymers, and a specific class of phosphorous compounds (abstract and column 1, lines 40-57). The graft polymers of Witmann '465 are disclosed as being prepared using a redox catalyst mixture of hydroperoxide and ascorbic acid (column 4, lines 21-35). The specific phosphorous compounds of the Witmann '465 compositions are not disclosed, taught or suggested as including phosphazenes. See column 1, lines 40-57, and column 5, line 51 through column 6, line 15 of Witmann '465.

Thomas et al disclose thermoplastic molding compositions comprising a polycarbonate based on substituted dihydroxydiphenyl cycloalkanes, and a graft polymer (abstract). The graft polymer of Thomas et al is disclosed as being prepared using an initiator system which includes an organic hydroperoxide and ascorbic acid (column 1, lines 11-37). The compositions of Thomas et al are disclosed as optionally including additives, such as flameproofing agents

(column 13, lines 13-18). However, the optional flameproofing agents of Thomas et al's compositions are not further described.

Wittmann '285, Wittmann '465 and Thomas et al each disclose compositions comprising aromatic polycarbonates, graft polymers prepared by means of a redox system comprising organic hydroperoxide and ascorbic acid, and flameproofing agents. However, Wittmann '285, Wittmann '465 and Thomas et al, either alone or in combination, provide no disclosure, teaching or suggestion as to selecting their flameproofing agents from phosphazenes. Wittmann '285 and Thomas et al provide no further disclosure or description of the flameproofing agents that may be used in their compositions, other than by use of the terms "flameproofing agents" or "flame retardants." Wittmann '465 disclose only a specific class of phosphorous compounds that may be included in their compositions. The specific class of phosphorous compounds of Wittmann '465 are not suggested as including phosphazenes.

The flame retardants of Maruyama et al's compositions are narrowly disclosed as being selected from phosphazenes. Maruyama et al **teach away** from the use of phosphorous compounds that are other than phosphazenes in their compositions (e.g., triphenyl phosphate, phosphoric esters and phosphoric ester oligomers). For example, Maruyama et al disclose that phosphoric esters typically have low melting points and poor compatibility with the resins into which they are incorporated. Such phosphoric ester containing resin compositions are further disclosed as suffering from various physical and processing deficiencies, such as reduced heat resistance and oozing of the phosphoric ester upon molding. See page 2, lines 12-41 of Maruyama et al. Further, Maruyama et al provide no disclosure, teaching or suggestion as to preparing the graft copolymers of their compositions using an organic hydroperoxide and ascorbic acid. As such, it is respectfully submitted that none of the cited references provide the requisite motivation to combine their respective teachings in the manner suggested in the Office Action of January 14, 2002.

As the Court of Appeals for the Federal Circuit has stated, there are three possible sources for motivation to combine references in a manner that would render claims obvious. These are (1) the nature of the problem to be solved, (2) the

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teaching of the prior art, and (3) the knowledge of persons of ordinary skill in the art, In re Rouffet, 47 USPQ 2d 1453, 1458 (Fed. Cir. 1998). The nature of the problem to be solved and the knowledge of persons of ordinary skill in the art are not present here and have not been relied upon in the rejection. As for the teaching of the prior art, the above discussion has established that none of the references relied upon in the rejection provide the requisite teaching, and certainly do not provide the motivation or suggestion to combine that is required by Court decisions.

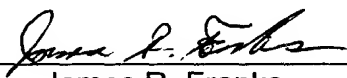
It is respectfully submitted that the rejection appears to impermissibly use Applicants' specification as a blueprint for selecting and combining or modifying the prior art to arrive at their claimed invention, thereby making use of prohibited hindsight in the selection and application of that prior art. The use of hindsight reconstruction of an invention is an inappropriate process by which to determine patentability. In re Rouffet, 47 USPQ 2d 1453, 1457 (Fed. Cir. 1998).

Regarding the comments on pages 3 and 4 of the Office Action, Applicants wish to respectfully counter that the examples of their specification do provide unexpected results. In particular, the examples demonstrate the criticality of the graft yield of graft polymer B of Applicants' presently composition being greater than 60 wt.%. The graft polymer Ba of Example 1 has a grafting yield of 89 wt.% (page 25, line 24), while the graft polymer Bb of Comparative Example 2 has a grafting yield of 55 wt.% (page 26, line 23). Further particularly, the examples demonstrate that thermoplastic compositions according to Applicants' invention provide excellent flame resistance **in combination with** improved notched impact strength, weld line strength and stress cracking resistance, relative to the comparative example. Such a combination of physical properties is desirable in, for example, thin-walled articles, such as thin-walled casing components (page 29, enumerated lines 4-9, below the table). The cited references, either alone or in combination, provide no disclosure, suggestion or teaching as to such a desirable **combination** of physical properties.

In light of the preceding comments, Applicants' claims are deemed to be unobvious and patentable over Maruyama et al taken with Wittmann '285 or Witmann '465 and Thomas et al. Reconsideration and withdrawal of this rejection is respectfully requested.

In light of the preceding amendments and remarks, Applicants' presently pending claims are deemed to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

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VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION: (Marked-Up)

The following has been between lines 1 and 3 on page 1 of the specification.

FIELD OF THE INVENTION

The following has been between lines 6 and 8 on page 1 of the specification.

BACKGROUND OF THE INVENTION

The following has been between lines 24 and 26 on page 1 of the specification.

SUMMARY OF THE INVENTION

The following has been inserted at the top of page 4 of the specification.

DETAILED DESCRIPTION OF THE INVENTION

IN THE CLAIMS: (Marked-Up)

1. (Once Amended, Marked-Up) A [T]~~t~~hermoplastic moulding composition[s containing] comprising:

A) 40 to 99 parts by weight of at least one of aromatic polycarbonate and[/or] polyester carbonate;

B) 0.5 to 60 parts by weight of a graft polymer [characterised in that the graft polymers B comprise] prepared from,

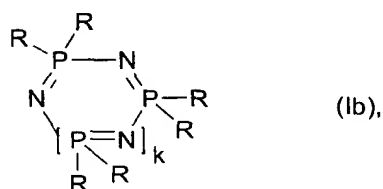
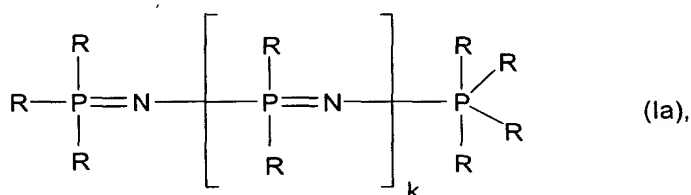
B.1) 5 to 95 wt.% of one or more vinyl monomers₁ and

B.2) 95 to 5 wt.% of one or more particulate diene rubbers having a glass transition temperature of $<10^{\circ}\text{C}$, which are produced by emulsion polymerisation,

[wherein the] said graft polymer being prepared by means of a graft polymerisation [is performed using] in the presence of an initiator system comprising an organic hydroperoxide and ascorbic acid, said graft polymerisation having a grafting yield of > 60 wt.%;

C) 0 to 45 parts by weight of at least one thermoplastic polymer selected from [the group comprising] thermoplastic vinyl (co)polymers and polyalkylene terephthalates[.];

D) 0.1 to 50 parts by weight of at least one component selected from [the group comprising] phosphazenes [of] represented by the following formulae,



in which

R is in each case identical or different and denotes amino, C_1 to C_8 alkyl, in each case optionally halogenated, or C_1 to C_8 alkoxy, C_5 to C_6 cycloalkyl, C_6 to C_{20} aryl, C_6 to C_{20} aryloxy, or C_7 to C_{12}

aralkyl, in each case optionally substituted by alkyl and/or halogen,

k denotes 0 or a number from 1 to 15[,]; and

E) 0 to 5 parts by weight of fluorinated polyolefin.

2. (Once Amended, Marked-Up) The [M]moulding composition[s according to claim 1 containing] of Claim 1 comprising:

60 to 98.5 parts by weights of A_i

1 to 40 parts by weight of B_i

0 to 30 parts by weight of C_i

2 to 35 parts by weight of D_i; and

0.1 to 1 parts by weight of E.

3. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 [containing] comprising 2 to 25 parts by weight of C.

4. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 [containing] comprising 5 to 25 parts by weight of D.

5. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 wherein vinyl monomers B.1 are mixtures prepared from:

B.1.1 50 to 99 parts by weight of at least one of vinyl aromatics₁ [and/or] ring-substituted vinyl aromatics and[/or] methacrylic acid (C₁-C₈)-alkyl esters_i and

B.1.2 1 to 50 parts by weight of at least one of vinyl cyanides₁ [and/or] (meth)acrylic acid (C₁-C₈)-alkyl esters and[/or] derivatives of unsaturated carboxylic acids.

8. (Cancelled)

9. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 wherein the grafting yield, of said graft polymerisation, is > 75 wt.%.

10. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 wherein the grafting yield, of said graft polymerisation, is > 85 wt.%.

12. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 wherein component D is selected from the group consisting of propoxyphosphazene, phenoxyphosphazene, methylphenoxyphosphazene, aminophosphazene and fluoroalkylphosphazenes.

13. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 further [containing] comprising at least one additive selected from [the group comprising] lubricants, [and] mould release agents, nucleating agents, anti-static agents, stabilisers, dyes and pigments.

14. (Twice Amended, Marked-Up) The [M]moulding composition[s according to] of Claim 1 [containing] further comprising flame retardants which differ from component D.

15. (Once Amended, Marked-Up) A [Process for the production of] method of producing the moulding composition[s according to claim 1, wherein] of Claim 1 comprising mixing and melt-compounding components A to E and optionally further additives [are mixed and melt-compounded].

19. (Once Amended, Marked-Up) The molding composition of Claim 1 wherein diene rubber B.2 is at least one member selected from the group consisting of diene rubber copolymers of diene rubber.

20. (Once Amended, Marked-Up) The molding composition of Claim 1 wherein diene rubber B.2 is polybutadiene rubber.

21. (Once Amended, Marked-Up) The molding composition of Claim 1 wherein the hydroperoxide, of the graft polymerisation of said graft polymer B, is at least one member selected from the group consisting of cumene hydroperoxide, tert.-butyl hydroperoxide and hydrogen peroxide.